

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 May 2005 (26.05.2005)

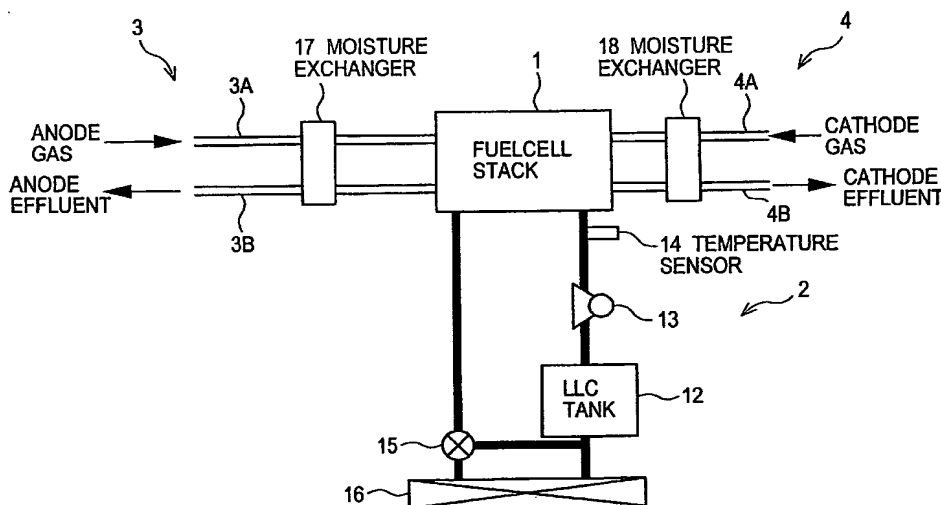
PCT

(10) International Publication Number
WO 2005/048389 A2

- (51) International Patent Classification⁷: **H01M 8/24**, 8/02, 8/04
- (21) International Application Number:
PCT/JP2004/016616
- (22) International Filing Date:
2 November 2004 (02.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2003-384039 13 November 2003 (13.11.2003) JP
- (71) Applicant (for all designated States except US): **NISSAN MOTOR CO., LTD.** [JP/JP]; 2, Takara-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 2210023 (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **YOSHIZAWA, Koudai** [JP/JP]; 2-92-6-305, Uragou-cho, Yokosuka-shi, Kanagawa 2370062 (JP). **MIYAKUBO, Hiroshi** [JP/JP]; 5-32-1, Shounantakatori, Yokosuka-shi, Kanagawa 2370066 (JP).
- (74) Agent: **GOTO, Masaki**; Shoyu-Kaikan, 3-1, Kasumigaseki 3-chome, Chiyoda-ku, Kanagawa 1000013 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: SOLID POLYMER FUEL CELL



(57) Abstract: Fuel cells (20) are superimposed one upon the other in the stacking direction. Each fuel cell (20) comprises an anode gas passage (32) and a cathode gas passage (36). Each passage has a meandering configuration provided with two or more bent portions (511, 512, 521, 522). At least the most downstream bent portion (512, 522) of at least one of the anode gas passage (32) and the cathode gas passage (36) is connected to a through-hole (332, 372) extending through the fuel cell stack (1) in the stacking direction of the fuel cells (20). The through hole (332, 372) averages out the condensed water in the anode gas passages (32) or the cathode gas passages (36) and prevents flooding from being caused in a specific anode gas or cathode gas passage.

WO 2005/048389 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.